

Southeast Asian Fisheries Development Center

Aquaculture Department

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Aqua Farm News

1996

Carp culture in the Philippines: polyculture with tilapia and other milkfish

Aquaculture Department, Southeast Asian Fisheries Development Center

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Carp culture in the Philippines

polyculture with tilapia and other milkfish

Different species of carp were cultured along with milkfish and tilapia at SEAFDEC Binangonan Freshwater Station to verify feasibility of carp polyculture with other species. The following were the significant findings:

- All species in polyculture reached marketable size after 4-5 months of culture.
- Fastest growth was exhibited by bighead carp (7.1-10.0 g/day) followed by silver carp (5.3-5.7 g/day) milkfish (1.8-2.1 g/day) tilapia (1.1-1.7 g/day) and common carp (0.8-1.3 g/day).
- The growth rate of silver carp (as major species in polyculture) was three times higher than that of the milkfish at the same stocking density and ratio.
- The addition of bighead, tilapia and common carp did not hamper the growth of the primary species (silver or milkfish) but rather increased production by 9-11%.

Bighead carp showed the highest recovery (90-100%) followed by milkfish (86-93%), silver carp

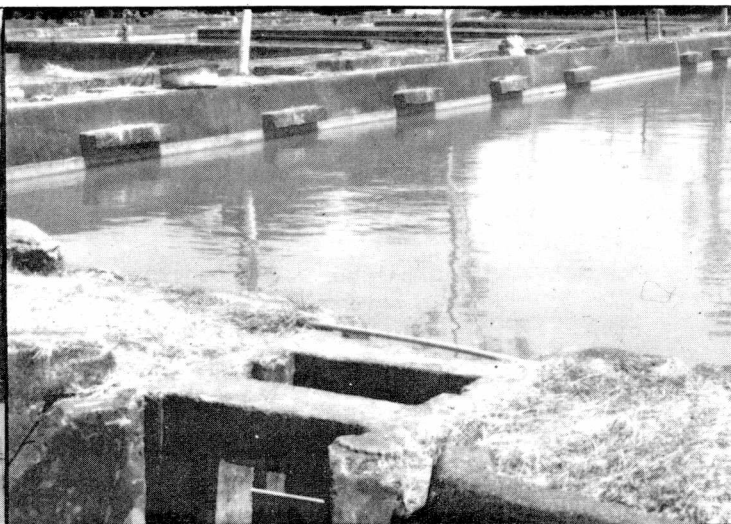
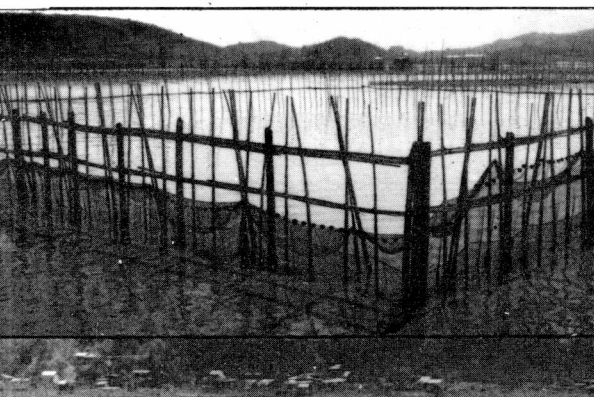
(48-77%), tilapia (9-68%) and common carp (5-20%). Tilapia and common carp tend to evade or by-pass the seine net resulting in low recovery at harvest.

- The total stocking density of 6.6 fish/m² was far from optimum during the culture period as final mean weights and daily growth rates of all species in polyculture did not vary significantly.

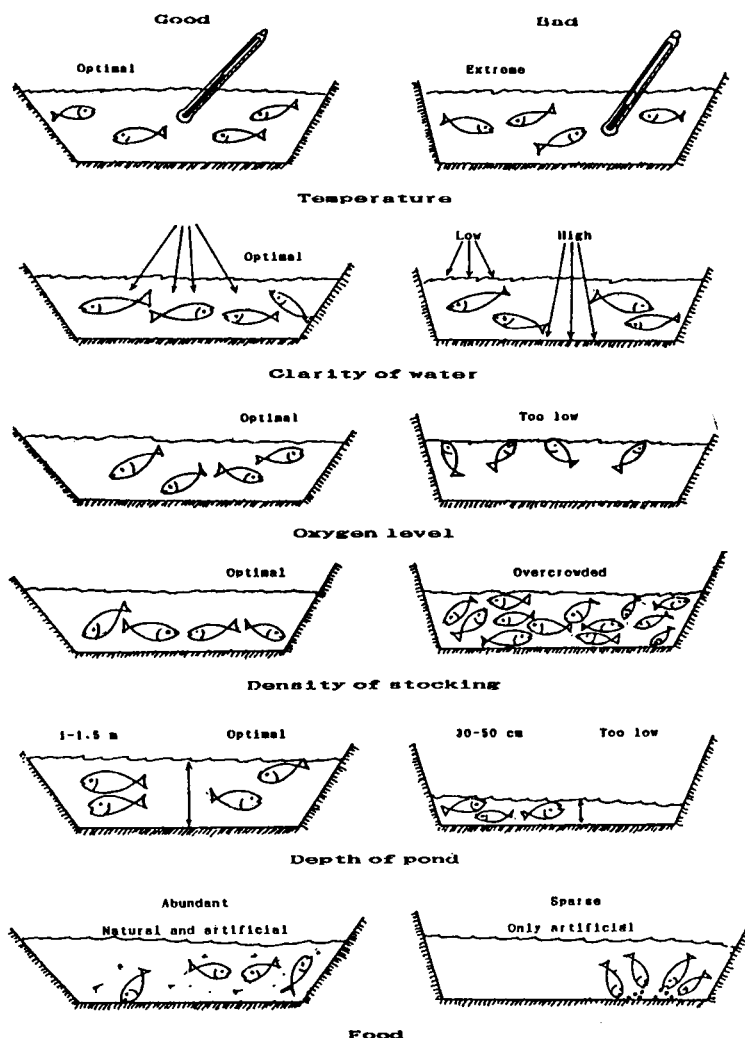
In a separate study, tilapia (*T. nilotica*) was grown in polyculture with different species of carps in cages at a total stocking density of 40 fish/m². The stocking ratio was 30 tilapia: 3 silver carp :2.5 bighead carp : 2.5 grass carp : 2 common carp. Selective harvesting of 100 g tilapia (with replacement) was done at intervals of 3, 4 and 6 months. The following were the results:

- Selective harvesting with replacement of 100 g + tilapia after six months resulted in increased production of 189.9 kg/50m²

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Grow-out culture of carp can be done in earthen ponds and in floating cages and pens in lakes



Proper
broodstock
management

Broodstock Management ... from page 11

conditioned in the spawning tank prior to hormonal treatment.

- Selected breeders should be handled with care to prevent stress. Low dissolved oxygen levels should be avoided and a regular change of water in the holding tank is necessary. It is best to handle carp breeders using special net with a strong mesh. It should be open at both ends, the stiffed mouth opening should be about 30 cm in diameter and 1 meter in length. When one

end of the net is opened, the fish can swim out easily.

- A double hammock made of water proof canvas, attached to a wooden or any solid frame is very useful for the transport of the selected breeders to the hatchery. Broodstock transport can also be mechanized using hard plastic or fiberglass containers provided with compressed oxygen.

Source: Gonzal, A. 1995. *International Training Course on Freshwater Aquaculture and Aquaculture Management*. 1995.

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- Average growth rate was highest in bighead carp (4.2-5.5 g/day) followed by silver carp (3.3-5.0 g/day); common carp (0.2-0.3 g/day) and grass carp (0.12-0.15 g/day);
- Average net production of all species in

polyculture ranged from 6.76-8.69 kg/m²

The growth performance of bighead and silver carp was faster than tilapia and common carp.

Source: Tabbu, M.; M. Lijauco.; R. Eguia; and C. Espegadera. 1986. *Polyculture of bighead carp, common carp and Nile Tilapia in cages in Laguna lake*. *Fish. Res. J. Phil.* 11 (1-2) 13-20.